Requirements to Shift the Time-of-Fight Parabola Minimum

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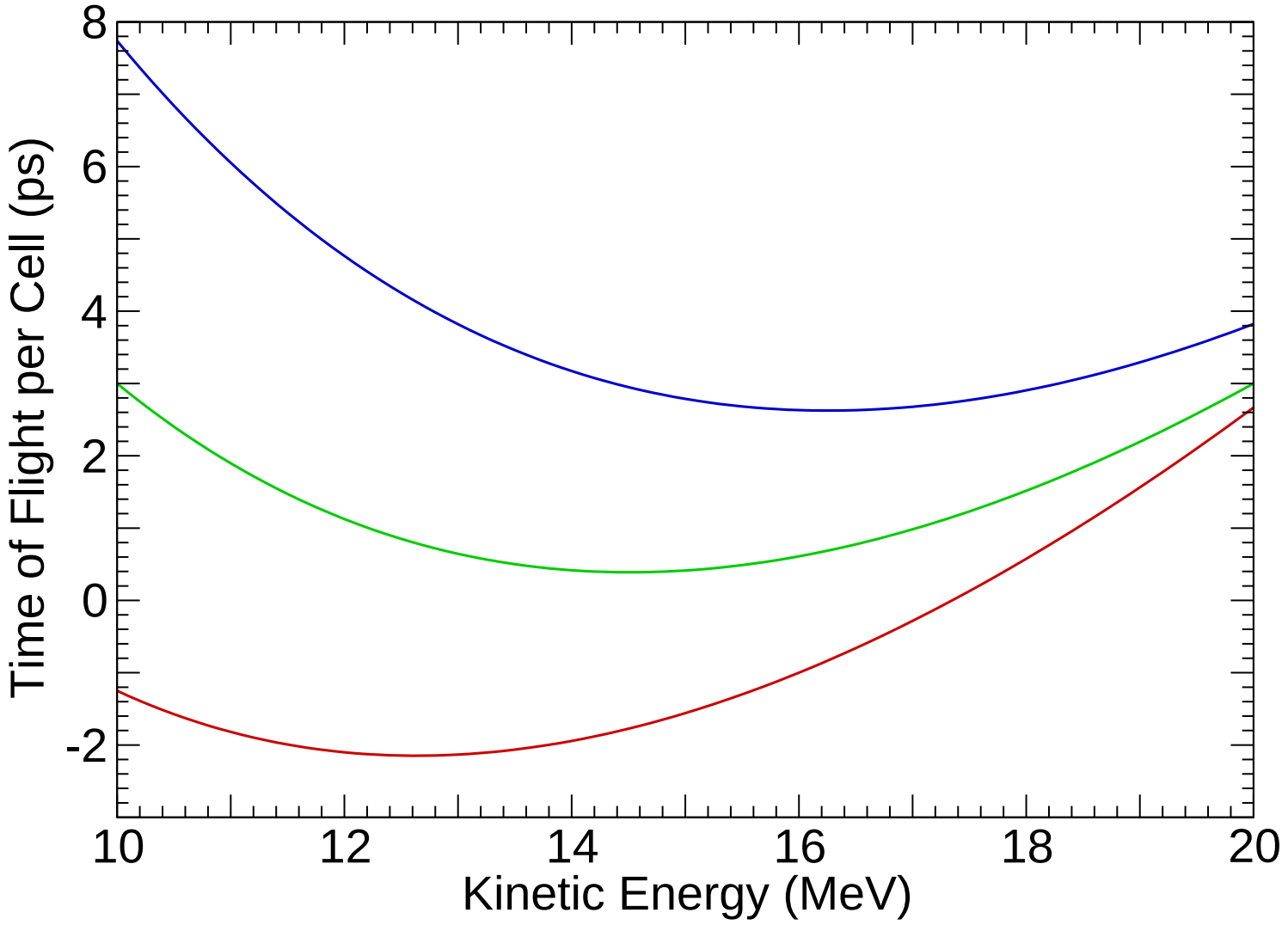
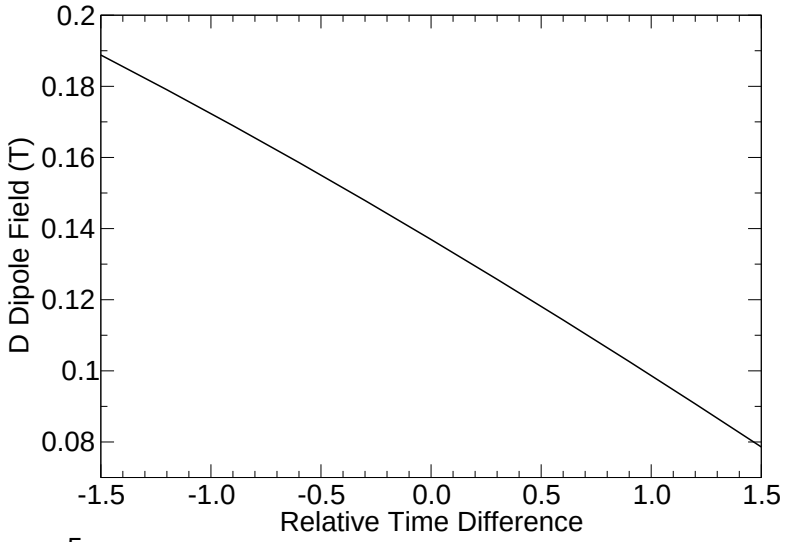
Algorithm for Producing Lattice Parameters

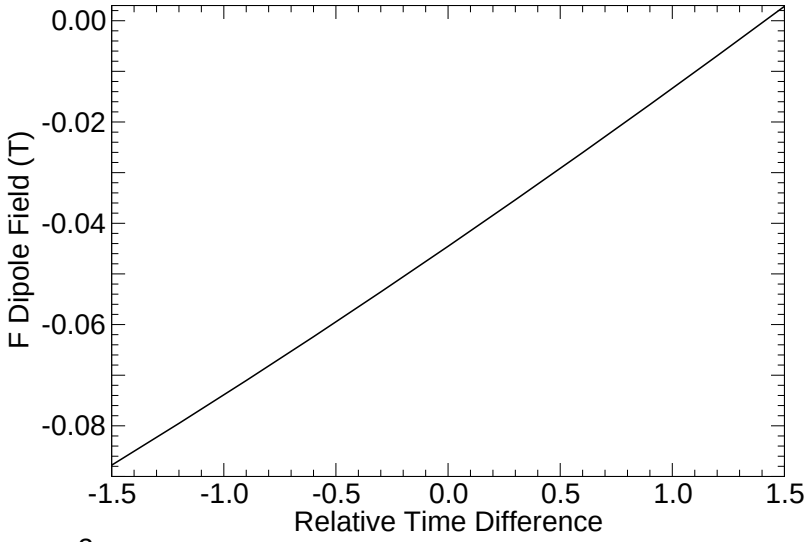
- Maintain same central tune as baseline lattice
- Specify difference between time of flight at minimum and maximum energies
  - Given relative to height of baseline parabola
- Minimize aperture needed for beam

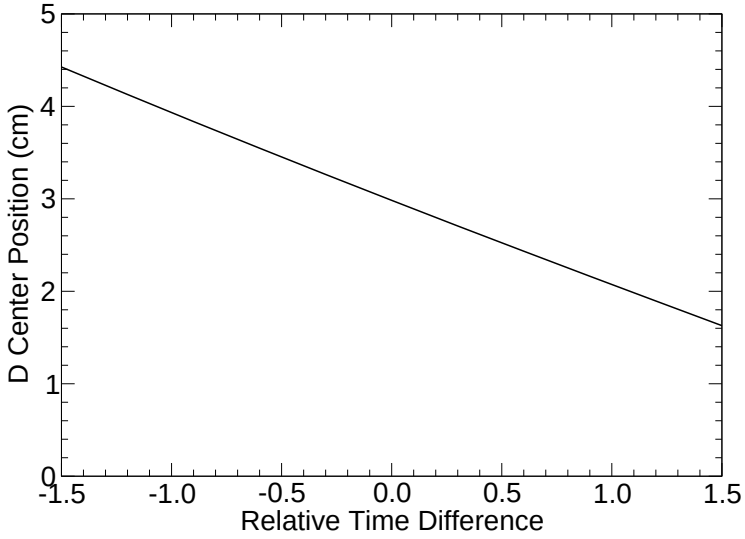
Time of Flight Curves

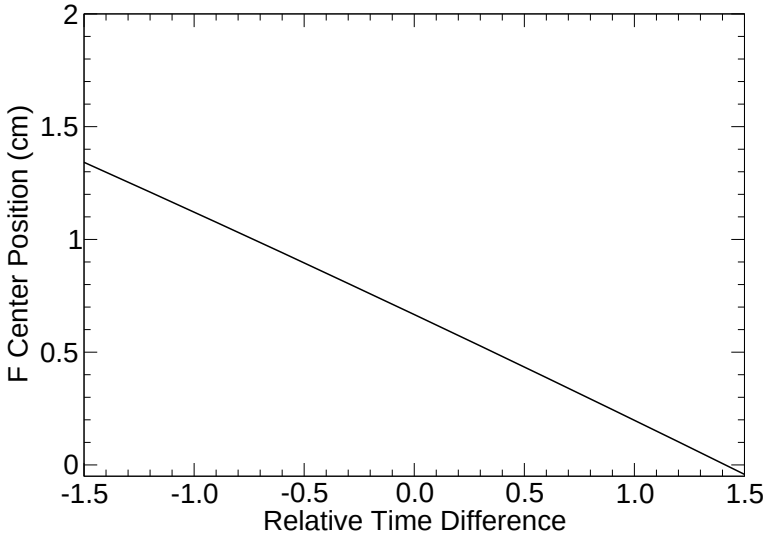


Fields and Magnet Positions









Observations

- Even with 1.5 times its natural time of flight range, minimum doesn't move that far
  - Need a value of 4 to shift all the way over to one side
- Dipole field is extremely linear in time difference
  - Need to vary quadrupole fields (particularly D) also, but not too much
- What do we want here?
  - Useful with low freuqency RF
  - With high frequency RF, can't make much use of a large shift